Lab Introduction

CSE 211 – Digital Design

R.A. Erdinç Türk

How to contact me?

- Email: erdincturk@akdeniz.edu.tr

- MS Teams

Lab Structure

- **Weekly Labs:** 8 total sessions (1 lab per week)

- **Duration:** Each lab will last approximately 1.5 hours

- **Location:** Elektrik – Elektronik Ölçme ve Devre Laboratuvarı

Lab Structure

Lab	Lab Name	Related Book Chapter
Lab 01	Digital Logic Gates	Chapter 02 - Boolean Algebra and Logic Gates
Lab 02	Simplifications	Chapter 03 - Gate Level Minimization
Lab 03	Adders and Subtractors	Chapter 04 - Combinational Logic
Lab 04	Encoders and Decoders	Chapter 04 - Combinational Logic
Lab 05	Multiplexers	Chapter 04 - Combinational Logic
Lab 06	Flip Flops	Chapter 05 - Synchronous Sequential Logic
Lab 07	Ripple Counters	Chapter 06 - Registers and Counters
Lab 08	Synchronous Counters	Chapter 06 - Registers and Counters

Tools and Resources

- **Tools:**

    - Logisim: http://www.cburch.com/logisim/

  or

    - Proteus Design Suite: https://www.labcenter.com/

- **Textbook Reference:** Digital Design by M. Morris Mano

Lab Sections

- **Total Sections:** 2 sections available for the lab.
    - **Lab starts at 13:30 for Section 1 students.**
    - **Lab starts at 15:30 for Section 2 students.**

- **Student Capacity:** Approximately 44 students per section.

- **Group Size:** Groups will consist of **4 students each**

Lab Rules

- **Arrive on time**; late students will not be accepted.
- Handle lab equipment with **care and report** any damage immediately.
- Work collaboratively within your assigned group; **ensure all members participate**.
- **Seek help or clarification** when needed; encourage discussion within your group.
- **Clean your workspace** and return all equipment to its proper place after the session.
- **Food and drinks are not allowed** in the lab.

Lab Workflow

1. **Pre-Lab Preparation**

   - **Read Pre-Readings:** Complete any assigned readings before the lab session.

2. **Pre-Report Submission**

   - **Fill Out Pre-Report:** Complete the lab pre-report if assigned (individually).

   - **Submit on Teams:** Return the pre-report on Teams prior to the lab (individually).

3. **During the Lab**

   - **Conduct Experiments:** Successfully carry out the assigned experiments.

   - **Collaborate:** Work effectively within your group and assist each other.

4. **Post-Lab Assignment**

   - **Return Assignment:** Submit any assignments related to the lab after completion.

What you need to know?

- Basic Electricity Electronics Training Set **Manual**

The only part we will use during the labs

Breadboard

What you need to know?

- How to use a breadboard

  https://learn.sparkfun.com/tutorials/how-to-use-a-breadboard/all